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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/870,167	05/30/2001	Takayoshi Taniai	Furusawa Case 60	9266

7590 04/10/2003
FLYNN, THIEL, BOUTELL & TANIS, P.C.
2026 Rambling Road
Kalamazoo, MI 49008-1699

EXAMINER

ANYASO, UCHENDU O

ART UNIT	PAPER NUMBER
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2675

DATE MAILED: 04/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/870,167

Applicant(s)

TANIAI ET AL.

Examiner

Uchendu O Anyaso

Art Unit

2675

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-12 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. **Claims 1-12** are pending in this action.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 1-6, 10 and 11** are rejected under 35 U.S.C. 102(e) as being anticipated by *Takeuchi* (U.S. 6,141,061).

Regarding **claim 1**, and for **claims 5 and 6**, Takeuchi teaches an invention that relates to an image processing system having scaling capabilities (column 1, lines 5-8).

Furthermore, Takeuchi teaches how a whole image processing system is installed inside a liquid crystal projector where it processes images for display on the liquid crystal display panel 44 wherein the images displayed on the liquid crystal display panel 44 are projected onto a projection screen by an optical system (column 5, lines 13-17, figure 1 at 44).

Furthermore, Takeuchi teaches how a gradation correction circuit 98 effects gradation correction such as gamma correction using a lookup table (column 8, lines 5-8, figure 3 at 98).

Also, Takeuchi teaches an LCD driver circuit 42 for driving a display panel 44 (figure 1 at 42, 44).

Art Unit: 2675

Furthermore, Takeuchi teaches a color converter 60, and a data selector 62 that selects and outputs the RGB signal output by the color converter 60 wherein the CPU 50 supplies the selection signal for the data selector 62 (column 6, lines 42-52, figure 2 at 50, 60, 62).

Also, Takeuchi teaches line buffers 64 and A-D converters 34 wherein since the color image is represented by an RGB three-color signal, n pieces of line buffers 64 are provided for each of R, G and B, and the line buffers 64 are memories which temporarily store the n pieces of parallel image signals generated by the A-D converters 34 (column 6, lines 53-59, figure 2 at 34, 64). Furthermore, Takeuchi teaches the impact of color on the image processing system wherein the "interpolation" is effected by the first enlargement/interpolation circuit 150 means such the processing for calculating the weighted average of two lines of the image signal is located before and after the line to be added (column 13, lines 30-46, figure 9C at 150).

Regarding **claim 2**, in further discussion of claim 1, Takeuchi teaches a color converter 60, and a data selector 62 that selects and outputs the RGB signal output by the color converter 60 wherein the CPU 50 supplies the selection signal for the data selector 62 (column 6, lines 42-52, figure 2 at 50, 60, 62).

Also, Takeuchi teaches line buffers 64 and A-D converters 34 wherein since the color image is represented by an RGB three-color signal, n pieces of line buffers 64 are provided for each of R, G and B, and the line buffers 64 are memories which temporarily store the n pieces of parallel image signals generated by the A-D converters 34 (column 6, lines 53-59, figure 2 at 34, 64).

Regarding **claims 3 and 4**, in further discussion of claim 1, Takeuchi teaches a method of sharpening the image wherein each of the vertical reduction unit and the horizontal reduction unit comprises: a buffer memory for storing a prescribed amount of input image data; a weighted-averaging unit for obtaining a weighted-average of first image data read from the buffer memory and second image data representing an image portion immediately following the first image data to produce third image data; a selector for selecting and outputting one set from among a plurality of sets of image data including the input second image data and the third image data output by the weighted-averaging unit; and a selection signal generator for generating from an image reduction factor a selection signal indicating an image portion which is to be dropped by the reduction and supplying the selection signal to the selector (column 3, lines 5-24).

Furthermore, Takeuchi teaches that the vertical reduction unit and the horizontal reduction unit each has a reduction factor in the range of 0.5 to 1, whereby the image portion which is to be dropped by the reduction in the vertical reduction unit is one line per location and the image portion which is to be dropped by the reduction in the horizontal reduction unit is one pixel per location (column 3, lines 38-44; *see generally* column 1, lines 10-17, figures 16(A)-16(D)).

Regarding **claims 10 and 11**, in further discussion of claim 6, Takeuchi teaches how the write clock pulse generator 76 generates a dot dock signal DCLK1 in accordance with the horizontal sync signal HSYNC1 supplied by the sync separator 32 (FIG. 1) wherein the processing by the image write control section shown in FIG. 2 is effected synchronously with

Art Unit: 2675

the dot clock signal DCLK1 and the sync signals VSYNC1, HSYNC1 (column 7, lines 41-49, figure 2 at 76).

Furthermore, Takeuchi teaches how a read clock pulse generator 108 generates a dot clock signal DCLK2 in accordance with the horizontal sync signal HSYNC2 supplied by the liquid crystal display driver 42 (FIG. 1) wherein the processing by the image read control section shown in FIG. 3 is effected synchronously with the dot dock signal DCLK2 and the sync signals VSYNC2, HSYNC2 (column 8, lines 39-48, figure 3 at 108).

Claim Rejections - 35 USC ' 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 7, 8 and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Takeuchi* (U.S. 6,141,061) in view of *Satake et al* (U.S. 6,493,052).

Regarding **claims 7, 8 and 12**, in further discussion of claims 5 and 6, Takeuchi does not teach a D/A conversion circuit that is used to improve contrast. On the other hand, Satake teaches how to improve the contrast and brightness for an electronic appliance (concretely, liquid crystal projectors and so on) mounted with such a liquid crystal display device as a display unit utilizing a signal processing circuit 17 comprising a D/A converter, gamma correction circuit, signal dividing circuit, etc (column 16, lines 28-31; column 13, lines 26-30, figure 11 at 17).

Art Unit: 2675

Thus, it would have been obvious to a person of ordinary skill in the art to combine Takeuchi and Satake's inventions because while Takeuchi teaches how a whole image processing system is installed inside a liquid crystal projector where it processes images for display on the liquid crystal display panel 44 wherein the images displayed on the liquid crystal display panel 44 are projected onto a projection screen by an optical system (column 5, lines 13-17, figure 1 at 44) by means of line buffers 64 and A-D converters 34 such the color image is represented by an RGB three-color signal, n pieces of line buffers 64 are provided for each of R, G and B, and the line buffers 64 are memories which temporarily store the n pieces of parallel image signals generated by the A-D converters 34 (column 6, lines 53-59, figure 2 at 34, 64), Satake teaches how to improve the contrast and brightness for an electronic appliance (concretely, liquid crystal projectors and so on) mounted with such a liquid crystal display device as a display unit utilizing a signal processing circuit 17 comprising a D/A converter, .gamma . correction circuit, signal dividing circuit, etc (column 16, lines 28-31; column 13, lines 26-30, figure 11 at 17). The motivation for combining these inventions would have been to achieve an efficient method for improving the contrast and brightness for liquid crystal projectors (column 16, lines 28-31).

Allowable Subject Matter

6. **Claim 9** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Art Unit: 2675

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 5,990,982 to *Gove et al* for a DMD-based projector for institutional use.

U.S. Patent 5,784,180 to *Sakai et al* for an image memory apparatus.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Uchendu O. Anyaso whose telephone number is (703) 306-5934. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Saras, can be reached at (703) 305-9720.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

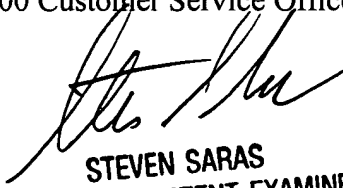
(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



Uchendu O. Anyaso



STEVEN SARAS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

04/06/2003